(12) # EUROPEAN PATENT APPLICATION

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(54) Videotex system.

(57) A videotex system in which a data base center and a user terminal apparatus are connected through a network line so that a data request from the user terminal apparatus is transmitted through the network to the data base center, while data in answer to the request is returned to the user terminal apparatus from the center through the network, and further wherein a code signal for specifying a control function of the user terminal apparatus, or a peripheral apparatus connected to said user terminal apparatus, is transmitted and received between the center and the user terminal apparatus, whereby on the basis of said transmission and reception, said center carries out the control specified by the code for a corresponding user terminal apparatus or peripheral apparatus.

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VIDEOTEX SYSTEM

This invention relates to a videotex system in which a data base center and a remote user terminal are in data communication with each other.

Present day videotex systems are generally of the
5   type having a center (host computer) having a data base, and a user terminal apparatus. The center and the user terminal are connected together via a network line, such as a telephone network line, local area network (LAN) or cable television (CATV) lines. A black and white or color CRT
10 display, a full keyboard, a printer and a cassette tape recorder, for example, can be connected to the user terminal apparatus as peripheral apparatus.

When data is requested by the keyboard, such data is transmitted through the network line to the center and
15 corresponding answering data is returned through the network line to the user terminal apparatus and is then displayed on the display as, for example, a color picture. At that time, if a copy key of the keyboard is depressed, the picture, displayed on the display, may be printed out
20 on paper by the printer as a hard copy. Alternatively, the data corresponding to the displayed picture is converted to an FSK (frequency shift keying) signal and is then fed to the tape recorder to be saved on a cassette tape.

Thus, videotex services are two way services
25 which provide users with access to "page" or "frames" that include alphanumeric and graphic information. Certain signal protocols have been developed by industry associations to standardize the interchange format. One such standard is the North American Presentation Level
30 Protocol (NAPLPS) which is described in the publication "Videotex/Teletex Presentation Level Protocol Syntax (North American PLPS)," published September 9, 1983, by the American National Standards Institute and the Canadian Standards Association.

35   As described above, according to prior art

videotex systems, the operation (processing) of the
center is mono-functional and passive. When a request is
transmitted from the user terminal apparatus, the requested
picture is only displayed on the display. The center
5   cannot force the terminal to display information
independently of the commands entered by the user of the
terminal. For example, in the event of a disaster, the
data base center could not send a command to the user
terminal to display disaster instructions unless the user
10   was already in data communication with the center.
Moreover, audio visual apparatus such as a
compact disc (CD) player or a video disc player and general
apparatus of various kinds cannot be operatively connected
to the prior art user terminal apparatus for any practical
15   purpose, the user terminal apparatus can only serve as a
display. For example, if a picture corresponding to the
data transmitted from the center is superimposed upon a
picture reproduced by the video disc player, both of them
are displayed independently in respect of their information
20   content and hence such a display has no merit.
Although the prior art videotex system is a
bidirectional system, its range of functions and ability
are poor and the hardware and the software available to the
user are limited. This invention is intended to utilize
25   the bidirectionality of the videotex system to a greater
extent and to considerably expand the range of functions
and ability thereof while remaining in compliance with the
NAPLPS standard.
According to the present invention, a signal of a
30   specical format maybe received and transmitted between the
data base center and the user terminal apparatus, and this
signal allows the center to control the user terminal
apparatus or the peripheral apparatus (external apparatus)
connected thereto in accordance with the content of the.
35   signal. In the preferred embodiment such control signals

are in compliance with the NAPLPS protocol.

Therefore, according to this invention, by combining the display function of a videotex terminal and the display function of a local audiovisual device, for
5   example a video disc player, it is possible to expand the display ability of the whole system. By forcibly controlling the user terminal apparatus from the data base center, it is possible to send the user important or urgent information. It is also possible to use the user terminal
10 apparatus as a computer having various functions, thus the range of functions, and ability thereof are extended considerably.

According to the present invention there is provided an information accessing user terminal for
15 communicating with a remote information data center, the user terminal comprising a plurality of operative devices, including a display means, which are responsive to mode control signals; input/output interface means for operatively connecting the terminal to the information data
20 center and for communicating command and data signals between the terminal and the information data center and processor means connected to the input/output interface means and the operative devices for controlling the operations of selected ones of the operative devices in
25 response to command signals received through a keyboard characterized in that the processor means is capable of receiving command signals from the information data center, interpreting them and sending a corresponding selected-mode control signal to a selected one of said operative
30 devices whereby the information data center can selectively control said operative devices.

The invention further provides a videotex system having an information data center which includes a programmed computer, and a remote user terminal connected
35 to the data center for accessing information from the data

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center, characterized in that there are provided a
plurality of operative devices, including a visual data
display device, a keyboard for entering command data, and
external devices, including data storage means, all at the

5 user terminal, input/output means for communicatively
connecting the terminal and the data center together,
programmed terminal processor means connected to the
input/output means and to the operative devices for
controlling the operations of the operative devices in

10 response to preprogrammed instructions and command signals
received from the data center via the input/output means or
command signals entered by the user.

        The invention therefore allows a videotex user
terminal to be remotely controllable by a data center and

15 also to have peripheral devices connected to it which may
be remotely controlled by a data base center.

        Preferably the invention also provides a videotex
terminal which can integrate the display functions of the
terminal with those of a peripheral audiovisual device.

20   The invention will be further described by way of
non-limitative example with reference to the accompanying
drawings in which like numerals denote like parts and;

        Figure 1 is a block diagram of the
videotex terminal and system according to the invention;

25   Figure 2 is a diagram illustrating the format of
a signal to be transmitted between the user terminal and
the data base center; and

        Figure 3 is a flow chart for illustrating the
operation of the processing means at the terminal and the

30 data center.

        In the embodiment below, the videotex system
conforms to the NAPLPS standards.

        Referring to Figure 1, the user terminal
apparatus 2 includes a microcomputer 50 with its I/O port

35 (I/O interface) connected to a full keyboard 41, a printer

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42, a tape recorder 43 and through a modern interface 60a
to a modern 110 and a telephone line 10. These
arrangements are the same as those of prior art videotex
systems.

5   Further, and as distinguished from the prior art
videotex systems, the user terminal I/O port is connected,
through peripheral interfaces 60b, 60c, 60d, 60e and
60f, with new peripheral apparatus 44 to 4N. It will be
understood that although such peripheral devices "46",

10 "47",etc are not shown in the Figure, they could be, for
example, a videotape recorder, a compact disc (CD) player,
an audio amplifier, a personal computer, a telex, or a
magnetic card reader.

          The peripheral apparatus 44 to 4N and the control
15 contents are indicated on TABLE 1. Although the details
thereof will be described later, these apparatus 44 to 4N
and the control contents are given identification codes
DVID as shown on the same table. The prior art peripheral
apparatus 41 to 43, the display 3, the user terminal

20 apparatus 2 and the center 1 are also given identification
codes DVID as shown on the same table.

TABLE 1

Identification code DVID	Peripheral apparatus (Control content)
20H	full keyboard 41
24H	display function
26H	timer function
28H	printer 42
29H	printer (reserve)
2AH	printer (reserve)
30H	video disc player 45
31H	video disc timer
38H	tape recorder 43
40H	VTR
48H	television receiver
50H	audio amplifier
58H	CD player
59H	bell
60H	personal computer
68H	telex
70H	magnetic card reader
77H	computer of center 1
7CH	memory jump
7DH	CM inserter
7EH	memory down load

A signal Sc having a format (sequence) shown in Fig. 2 can be transmitted and received between the center 1 and the user terminal apparatus 2 of the present invention. That is, the signal Sc has the same format with respect to the up-link direction (from the user terminal apparatus 2 to the center 1) and the down-link direction (from the center 1 to the user terminal apparatus 2). Referring to Figures 2 and 3, in the signal Sc, a first byte DLE and a second byte STX are control codes indicative of the beginning of

the signal Sc (text) and the values thereof are 10H and
02H (in hexidecimal code). The CPU 50 of the terminal
(or the center 1) upon receiving these codes through
the modem 110 and modem interface 60a looks for a
5   following third byte DCI which is a code indicating
that the signal Sc is concerned with the control of the
peripheral apparatus 41 to 4N and the value thereof is
11H.

Next a fourth byte DSTD designates to the CPU 50
10 the peripheral apparatus to which the signal Sc is to
be sent, and a fifth byte SRCD designates the
peripheral apparatus from which the signal Sc is
transmitted. Symbols dd and ss of the data DSTD and
SRCD, respectively, represent the identification codes
15 DVID on the table I. For example, when printing data
is directly supplied from the center 1 to the printer
42, DSTD=28H and SRCD=77H.

These, n bytes of TEXT beginning with the sixth
byte are data indicative to the CPU 50 of the body of
20 text, which can include command instructions, and which
is to be supplied to the peripheral apparatus 41 to 4N
or the center 1. Accordingly, the length n of this
data is indefinite.

Last bytes DLE and ETX next to the data TEXT are
25 codes indicative to the CPU 50 of the end of the signal
Sc and the values thereof are 10H and 03H. The TEXT is
thereafter sent by the CPU 50 to its destination
device.

In the data TEXT, when 10H (DLE code) is
30 transmitted as the data, it is possible to discriminate
the 10H data from the DLE code indicative of the
beginning and end of the signal Sc by transmitting the
10H data twice. When the signal Sc is transmitted
and received between the center 1 and the user terminal
35 apparatus 2, it is modulated to a predetermined

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modulated signal by a MODEM 110 connected between the telephone line 10 and the modem interface 60a.

The peripheral apparatus (control contents) and the identification codes DVID in the table 1 are as

5 follows.

(i) Full keyboard 41 (DVID=20H)

This code is used, when the keyboard 41 is connected with other input and output apparatus such as a magnetic card reader and so on, to access the same.

10 Generally, the key input data is only transmitted from the keyboard 41 to the center 1. Under such circumstances, the signal Sc becomes the same as the prior art data signal.

(ii) Display control (DVID=24H)

15 This code is used for the center 1 to control the display of the display 3; i.e., DSTD=24H and SRCD=77H are satisfied. The data TEXT is of one byte (n=1) and is defined as in the following table.

TEXT	OPERATION
20H	Display videotex picture
21H	Superimpose picture of other video apparatus upon videotex picture
22H	Display picture of other video apparatus
23H	Mix (superpose) picture of other video apparatus and videotex picture
30H	Display normal picture
31H	Expand left-half of inherent picture and display it on the whole picture
32H	Expand right-half of inherent picture and display it on the whole picture
40H	Write picture in display memory (video RAM) normally
41H	Write picture data in display memory on its region corresponding to left-half of picture
42H	Write picture data in display memory on its region corresponding to right-half of picture
43H	Display 32H and write 40H
44H	Reduce whole picture to left-half and write 42H
50H	Display picture in NTSC system
51H	Display picture in PAL system

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Accordingly, the hardware and software of the display 3 is constructed to be able to carry out these code TEXT operations. Since all of these functions and the apparatus necessary to carry them out in modern

5 computer controlled raster scan display systems are known to those skilled in the art, the details of such hardware and software will not be discussed.

(iii) Timer function (DVID=26H)

This code is used to carry out the processing in

10 accordance with a program previously loaded onto the user terminal apparatus 2 from the center 1 when the key-in by the user and transmission of the data from the center 1 are not carried out for a certain interval. Such processing is carried out by macro

15 codes 21H and 20H. Accordingly, this function may be used to send important or urgent information for instance in the case of accidents, disasters and so on, a warning can be given to the users.

For this operation, DSTD=26H and SRCD=77H and the data TEXT is formed of 8 bytes (n=8) and is defined as follows:

20

$$TEXT="U_1 \ U_2 \ U_3 \ U_4 \ H_1 \ H_2 \ H_3 \ H_4"$$

$U_1 \ U_2 \ U_3 \ U_4$: timer data for the user

25 $H_1 \ H_2 \ H_3 \ H_4$: timer data for the center 1

These U_1 to U_4 and H_1 to H_4 are ASCII codes and the unit is a second. The minimum period of the timer is zero second (reset) and the maximum period is 4096

30 seconds.

(iv) Printer 42 (DVID=28H)

This code is used to print out the picture image by the printer 42. Whether the printer to be used is a video printer or a dot printer is set by the user. If

35 the data is printing data, it is transmitted from the center 1 to the user terminal apparatus 2, while an acknowledge signal and a ready signal are transmitted from the user terminal apparatus 2 to the center 1 so that although DVID=28H and 77H, the codes DSTD and SRCD

are reversed by the direction of transmission.
Further, the data TEXT is the data of the body. Even
when the user is absent, an important message can be
sent to the user via the printer using these codes and
5   the programming within the CPU 50.

(v) Printer (DVID=29H)

This code is used to print out the picture image
by the dot printer when the user terminal apparatus 2
is connected to a videotex system of the PRESTEL
10   system. The PRESTEL system is a standard adopted by
the British Post Office. The other codes are the same
as those of item (iv).

(vi) Printer (DVID=24H)

All arrangements are the same as those on the item
15   (v) in the case of the video printer.

(vii) Video disc player (DVID=30H)

This code is used, when the user prepares a video
disc, to make various services possible by controlling
its playback. For example, when a tourist agency
20   inputs the destination, the scenery of the destination
and so on are reproduced from the video disc as an
animation and also reproduced are numerals indicating
the tourist's costs superimposed thereon on the basis
of the data from the center 1.

25   Accordingly, upon reproducing the video disc, the
center 1 transmits an address signal (frame number or
the like) indicative of the reproducing position and a
playback mode command and the like by using this code
DVID. If necessary, the address signal and so on are
30   transmitted from the video disc player 45 to the center
1 by using the code DVID. At that time, a handshake is
established between the center 1 and the video disc
player 45. When this code DVID is assigned, an access
of data is made from a sub-port 120 (RS-232C/DTE
35   arrangement) in the user terminal apparatus 2.

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Another example is an interactive shopping guide
terminal. Upon receiving a request at the center 1
from the terminal 2, the center sends to the terminal
display 3 a menu list for display. The user then
5   selects the menu to be displayed and, by means of the
keyboard 41 (or some other input device) sends a signal
to the center 1 to display a particular one of the
menus (e.g., "shopping guide").

The center 1 then begins a shopping guide program
10   and issues a video disk control command in the form
10H/02H/11H/30H/77H/TEXT/10H/03H where TEXT specifies a
particular video track and appropriate command signals
to cause the video disk player to output to the
terminal 2 and its display 3, an opening image of a
15   shopping guide. The user can then, by means of the
keyboard 41, for example, request a change in the
displayed image by sending appropriate commands to the
center 1. In response to each such command, the center
sends a response signal to the video disc player to
20   output the requested information. Additionally,
display messages for the display 3, such as "Selection
Request," price lists, catagory lists, etc. are
supplied in NAPLPS format by the center 1 to the
terminal display 3.
25   This allows the advantageous use of the video disc
player as an image data source since bit image data of
the NAPLPS system is poor and time consuming relative
to the video disk player.

Further, instead of a video disc player, equipment
30   having communication means conforming to the
specification of RS-232C can be controlled by this code
DVID. The data is then sent from the peripheral device
45 or 4N to the center 1 through the modem interface
60a and the line 10. The center 1 then incorporates
35   this data with the additional data supplied by the user
terminal 2 (from keyboard 41, for example), and returns

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data display signals to the terminal 2 which integrates all such data into a coherent display.

(viii) Video disc timer (DVID=31H)

When the data for the video disc player is
5 transmitted back from the center 1 to the terminal 2 according to the item (vii), because it takes longer for the video disc player to be controlled as compared with a data transfer speed, this code is used to match the timing. This determines the spacing of data
10 transmitted by the data TEXT.

(ix) Tape recorder 43 (DVID=38H)

If this code is transmitted from the center 1, the data TEXT is converted to an FSK (frequency shift keying) signal of 1300 bps and is then supplied from
15 the user terminal apparatus 2 to the tape recorder 43 through the cassette interface 60d. Accordingly, the picture information, the program, general data and so on can be saved in the cassette tape.

(x) VTR (DVID=40H)
20 This code controls a VTR in the same way as the item (vii).

(xi) Television receiver (DVID=48H)

This code controls a television receiver in the same way as the item (vii).
25 (xii) Audio amplifier (DVID=50H)

This code controls an audio amplifier in the same way as the item (vii).

(xiii) CD player (DVID=58H)

This code controls a CD player in the same way as
30 the item (vii).

(xiv) Bell (DVID=59H)

This code is used to ring a buzzer or other audible indicator of the user terminal apparatus 2 and the ringing period is specified by the data TEXT.

(xv) Personal computer (DVID=60H)

This code is used to link a personal computer to the user terminal apparatus 2.

(xvi) Telex (DVID=68H)

5   This code puts the user terminal apparatus 2 into a terminal apparatus mode of a telex.

(xvii) Magnetic card reader (DVID=70H)

This code is used when a magnetic card reader is connected to the keyboard 41 and the input port of the

10   keyboard 41 is used for the magnetic card reader, to inform the center 1 of the magnetic card input. At that time, the data TEXT becomes the data inputted by the magnetic card. Further, at that time, the input data from the magnetic card is not displayed on the

15   display 3 but a protection routine is carried out to safeguard the information against access to unauthorized users. This can include an encryption routine, if necessary, carried out by the CPU 50.

(xviii) Computer of the center 1 (DVID=77H)

20   This code indicates that the computer is the computer of the center 1.

(xix) Memory jump (DVID=7CH)

Since the user terminal apparatus 2 is formed of a microcomputer 50, a particular program can be loaded

25   into, for example, a RAM 80 and the program can be executed.

Therefore, this code 7CH is used to set an instruction pointer (entry address) of the CPU 50 of the user terminal apparatus 2 on the basis of the

30   instruction from the center 1 and to execute the program at that pointer.

The CPU 50 of the user terminal apparatus 2 can be an Intel model 8088 or 8086 type, for example, so it is assumed that the data TEXT is formed of 4 bytes (n=4)

35   and is defined as follows:

TEXT=$"S_1 \; S_2 \; O_1 \; O_2"$

S_1, S_2 : segment base values of the instruction pointer;

5 O_1, O_2 : offset values of like instruction pointer.

In this case, these $S1$, S_2, O_1 and O_2 are each formed of 8088/8086 word system and DSTD=7CH and SRCD=77H are satisfied.

10 (xx) CM inserter (DVID=7DH)

This code is a sequence prepared for the pre-processor of the user terminal apparatus 2 and the first 2 bytes of the data TEXT are assigned to the control code and the remaining byte is assigned to the

15 body of text. If the user terminal apparatus 2 has no pre-processor and receives this code directly, this code is neglected.

(xxi) Memory down load (DVID=7EH)

This code is used to load data, such as a program,

20 or the like to the RAM 80 of the user terminal apparatus 2 from the center 1 and the data TEXT is formed of (6+m) bytes and is defined as follows.

TEXT=$"S_1, \; S_2, \; O_1, \; O_2, \; 1_1, \; 1_2, \; D_1, \; ..., \; Dm"$

25 S_1, S_2 : segment base values when the data is loaded;

O_1, O_2 : offset values when the data is loaded;

30 1_1, 1_2 : length of data (=m);

D_1 to Dm : data of the body of text (m bytes).

64K bytes data can be transmitted one at a time, and when it reaches the data length "m" or when the

35 codes DLE and ETX are transmitted, this mode is ended.

Accordingly, when data such as baud rate data of the RS-232C interface for setting the modes of the peripheral apparatus 4N are stored in the RAM, the modes for the peripheral apparatus 4N can be changed by

40 changing that data. If items (xxi) and (xiv) are executed, from the center 1, a video game program can be loaded into the user terminal apparatus 2 and the user can execute the video game program.

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As described above, according to the present invention, the peripheral apparatus 41 to 4N, the display 3 or the user terminal apparatus 2 itself can be controlled by the center 1.

5   Therefore, according to the present invention, since the center 1 can remotely control both the terminal and its attached devices, the utility of the user terminal can be greatly expanded. Various examples of these expanded capabilities have been

10 described. The videotex display function (of NAPLPS) and the display function of the video disc player can be combined so that the display ability of the system can be considerably expanded. Important or urgent information can be adequately reported to the user by

15 forcibly controlling the user terminal apparatus 2 by the center 1. Furthermore, the user terminal apparatus 2 can be used as a computer having various functions.

    The terms and expressions which have been employed here are used as terms of description and not of

20 limitations, and there is no intention, in the use of such terms and expressions, of excluding equivalents of the features shown and described, or portions thereof, it being recognized that various modifications are possible within the scope of the invention claimed.

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CLAIMS

1.   An information accessing user terminal (2)
for communicating with a remote information data center
(1), the user terminal (2) comprising
            a plurality of operative devices (41 to 4N,
5   3), including a display means (3), which are responsive to
mode control signals;
            input/output interface means (60a) for
            operatively connecting the terminal to the
10 information data center and for communicating command and
data signals between the terminal and the information data
center and
            processor means (50) connected to the input/
15 output interface means (60a) and the operative devices (41
to 4N,3) for controlling the operations of selected ones of
the operative devices (41 to 4N,3) in response to command
signals received through a keyboard (41) characterized in
that the processor means (50) is capable of receiving
20 command signals from the information data center (1),
interpreting them and sending a corresponding selected mode
control signal to a selected one of said operative devices
whereby the information data center (1) can selectively
control said operative devices (41 to 4N,3).

25   2.   An information accessing user terminal (2)
according to claim 1, characterized in that said command
signals include an originating device code (SRCD), a
destination device code (DSTD) and control data code (DC1).

            3.   An information accessing user terminal (2)
30 according to claim 1 or 2, characterized in that said
terminal (2) includes an RS-232C type interface (120) and
said control data code are supplied to any auxiliary device
(45-4N) connected by way of the RS-232C interface (120) to
the terminal (2).

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4.   An information accessing user terminal (2) according to claim 1, 2 or 3, characterized in that said terminal processor means (50) generates said command signals and transmits them to the information data center
5   (1) upon a command entered at the user terminal (2).

5.   An information accessing user terminal (2) according to claim 1, 2 or 3 characterized in that the terminal processor means (50) generates said command signals and transmits them to the information data center
10   (1) upon receiving a command signal from the information data center (1).

6.   A videotex system having an information data center (1) which includes a programmed computer, and a remote user terminal (2) connected to the data center (1)
15   for accessing information from the data center (1), characterized in that there are provided

a plurality of operative devices (41-4N,3), including a visual data display device (3), a keyboard (41) for entering command data, and
20   external devices (43-4N), including data storage means (43,44), all at the user terminal (2),

input/output means (60a) for communicatively connecting the terminal and the data center together,
25   programmed terminal processor means (50) connected to the input/output means (60a) and to the operative devices (41-4N,3) for controlling the operations of the operative devices (41-4N,3) in response to preprogrammed instructions and
30   command signals received from the data center (1) via the input/output means (60a) or command signals entered by the user.

7.   A videotex system according to claim 6 characterized in that the data center (1) and the terminal
35   (2) exchange coded digital signals which have a format

sequence beginning with one or more bytes containing a
starting code (OLE, STX), a code (DC1) indicating whether
an external operative device is to be controlled, a code
(DSTO) indicating the particular device to be controlled, a
5   code (SRCD) indicating the device from which the signal is
sent, a plurality of bytes (TEXT) of a text message which
can include command instructions to the device, and lastly
end codes (DLE, ETX) indicating the end of the sequence.

        8.   A videotex system according to claim 6 or 7
10   characterized in that one of the user terminal external
devices includes visual data storage means (45) for
supplying image digital data for forming a visual display
on the display device (3) and wherein in operation the data
center (1) sends a command signal to the terminal (2) via
15   the input/output means (60a), which signal is interpreted
by the terminal processor means (50) and is sent to the
designated device (45) to cause it to supply visual data to
the terminal visual display device (3), and the data center
(1) supplies additional display data to the terminal (2)
20   for simultaneous display on the display means (3) with the
image data from the visual data storage means (45).

        9.   A videotex system according to claim 6, 7 or
8 wherein the terminal (2) includes internal data storage
means (80), for storing data, including program data, for
25   the terminal processor means (50).

        10.   A videotex system according to claim 9
wherein the terminal (2), upon receipt of a predetermined
command signal from the data center (1), stores data
supplied by the center (1) in the internal data storage
30   means (80).

        11.   A videotex system according to claim 10
wherein the stored data is program data to control the
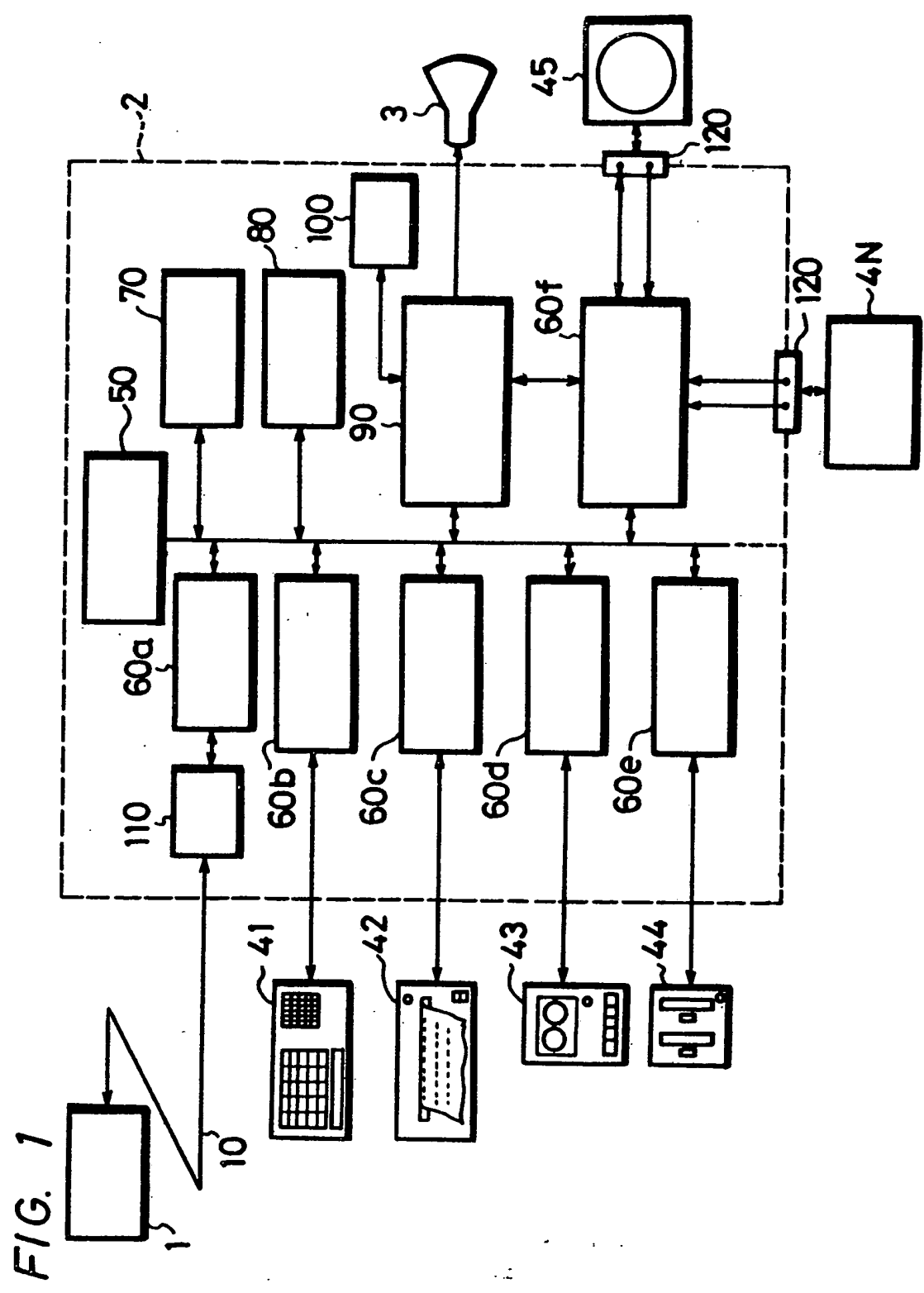terminal processor means (50).

        12.   A videotex system according to claim 9, 10
35   or 11 wherein the data center (1) can send a predetermined
command signal to the terminal (2) to cause the terminal
processor (50) to run a select program stored in the
internal data storage means (80).

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13. A videotex system according to any one of
claims 7 to 12 wherein the operative devices include a
keyboard (41), a display (3), a timer, a printer (42), a
video disc player (45), a video disc timer, a tape recorder
5   (43), a video tape recorder, a television receiver, an
audio amplifier, a compact disc player, an audible
indicator, and a personal computer, and the hexadecimal
codes indicating the device to be controlled and the code
sending device are as follows:

10 --

Identification code	Operative Device
20H	keyboard
24H	display
26H	timer
28H	printer
30H	video disc player
31H	video disc timer
38H	tape recorder
40H	video tape recorder
48H	television receiver
50H	audio amplifier
58H	compact disc player
59H	audible indicator
60H	personal computer
77H	computer of center
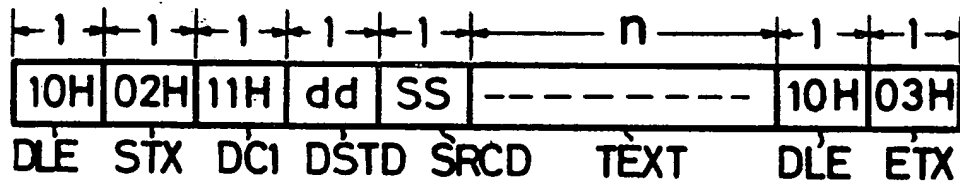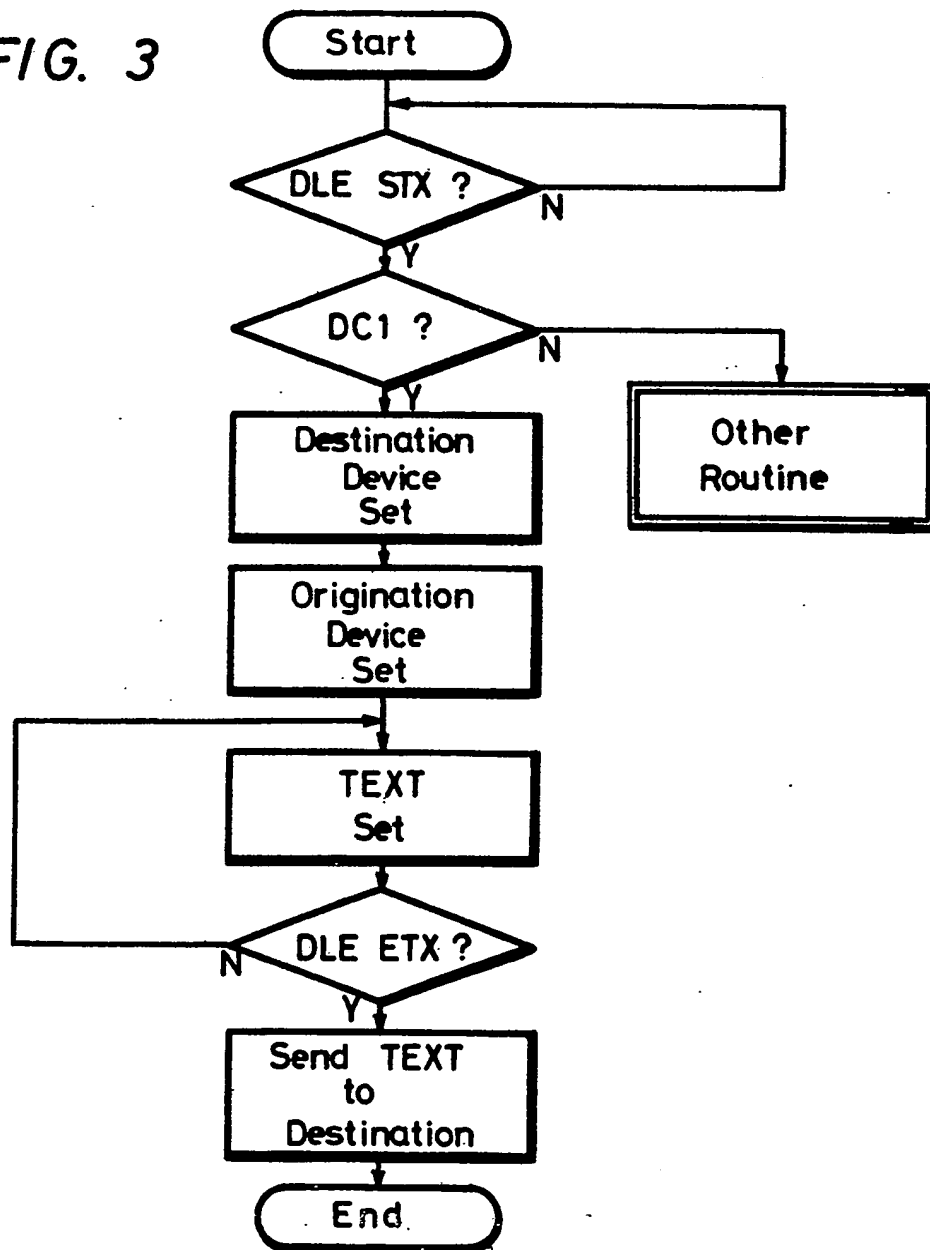
15, 20, 25 (line markers in left margin)

FIG. 1

FIG. 2

10H	02H	11H	dd	SS	– – – – – – –	10H	03H
DLE	STX	DC1	DSTD	SRCD	TEXT	DLE	ETX

FIG. 3

Start

DLE STX ? — N

DC1 ? — N → Other Routine

Y → Destination Device Set

Origination Device Set

TEXT Set

DLE ETX ? — N

Y → Send TEXT to Destination

End

EUROPEAN PATENT APPLICATION

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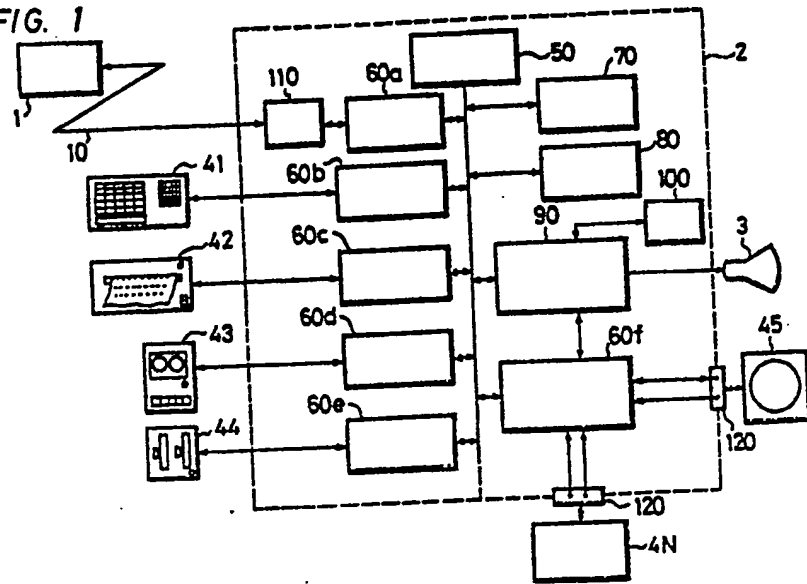7-35 Kitashinagawa 6-chome Shinagawa-ku
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(54) Videotex system.

(57) A videotex system in which a data base center (1) and a user terminal apparatus (2) are connected through a network line (10) so that a data request from the user terminal apparatus is transmitted through the network to the data base center, while data in answer to the request is returned to the user terminal apparatus from the center through the network, and further wherein a code signal for specifying a control function of the user terminal apparatus, or a peripheral apparatus (44–4N) connected to said user terminal apparatus, is transmitted and received between the center and the user terminal apparatus, whereby on the basis of said transmission and reception, said center carries out the control specified by the code for a corresponding user terminal apparatus or peripheral apparatus.

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FIG. 1

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Application number

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DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.4)
X	DE-A-3 310 745 (SIEMENS) * Page 7, line 11 - page 10, line 26; figure *	1,4,5	H 04 M 11/08
Y		2,3,6-12	

Y	AT-B- 375 234 (FORSCHUNGSZENTRUM GRAZ) * Page 2, lines 30-45; page 3, lines 10-35; figure *	6,8	

A	NACHRICHTENTECHNISCHE ZEITSCHIFT N.T.Z., vol. 37, no. 4, March 1983, pages 214-220, Berlin, DE; J. GABEL et al.: "Der CEPT-Standard als Grundlage des Bildschirmtext-Dienstes" * Page 214, right-hand column, line 3 - page 215, left-hand column, line 9; figures 1,2 *	1,2,4-13	
			TECHNICAL FIELDS SEARCHED (Int. Cl.4)
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Y	COMMUTATION & TRANSMISSION, vol. 5, no. 4, December 1183, pages 71-82, Issy-les-Moulineaux, FR; M. PESTRE et al.: "Le terminal teletex TLX 100" * Figure 3 *	3	H 04 L
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The present search report has been drawn up for all claims

Place of search THE HAGUE	Date of completion of the search 24-07-1987	Examiner MIKKELSEN C.

0194143

Application number

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Office

EUROPEAN SEARCH REPORT

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Page 2

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Y	E.D.N. ELECTRICAL DESIGN NEWS, vol. 28, no. 5, 3rd March 1983, pages 109-118, Boston, Massachusetts, US; A. GOLDBERGER et al.: "Understand datacomm protocols by examining their structures" * Page 111, box, right-hand column, lines 1-24 *	2,7	
Y	DE-A-2 950 296 (GENERAL ELECTRIC) * Page 8, line 30 - page 10, line 3 *	9-12	
A		1,4-6	
A	GB-A-2 111 349 (STANDARD TELEPHONES) * Page 1, lines 42-98 *	1,4-6, 8-10	TECHNICAL FIELDS SEARCHED (Int. Cl.4)
A	FUNKSCHAU, no. 19, September 1981, pages 62-64, München, DE; H.J. ROTHAMEL: "Bildschirmtext im Büro" * Page 64, left-hand column, line 37 - middle column, line 13; figure 2 *	1,2,4-6,8,9	

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	24-07-1987	MIKKELSEN C.

CATEGORY OF CITED DOCUMENTS

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D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

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